

4.8 HAZARDS AND HAZARDOUS MATERIALS

4.8.1 Setting

The Master Plan corridor stretches the entire length of Santa Cruz County from the San Mateo County line north of Davenport past the Pajaro River in Watsonville to connect to Monterey County's MBSST system, and into the town of Pajaro at the rail right-of-way southern terminus. The corridor generally follows the Santa Cruz Branch Rail Line right-of-way. The rail right-of-way would serve both rail service and bike/pedestrian trail functions. The proposed trail would extend for a distance of approximately 50 miles (including coastal spur trails) through unincorporated Santa Cruz County and portions of the cities of Santa Cruz, Capitola, and Watsonville. The southernmost segment (segment 20) would extend into Monterey County. Adjacent land uses vary along the MBSST Network corridor and include open space, agriculture, and the community of Davenport in the northern reach; urban land uses, including industrial, residential, commercial, and recreation uses in the central reach; and residential, agricultural, open space, and industrial land uses in the Watsonville reach.

a. General Hazards Associated with Historical Uses. The MBSST Network corridor abuts agricultural uses in both the northern and Watsonville reaches. Agriculture has been a prevalent land use in Santa Cruz County since the mid 1800s. The corridor primarily aligns with the Santa Cruz Branch Rail Line right-of-way, which began operation in May 1876 as a narrow gauge passenger and freight rail line. The rail line was extended north toward Davenport, with freight and passenger operations beginning on the northern portion in 1908. Passenger service was discontinued in 1938.

Historical agricultural operations in the project vicinity likely involved the use of organochlorine pesticides. Furthermore, herbicides were commonly used as a defoliant to control weeds along railroad corridors. Residual amounts of these chemicals could exist in surficial soils along the MBSST Network corridor. Also, the creosote that is used to protect the wooden railroad ties from decay is known to contain poly-nuclear aromatic hydrocarbons (PAHs). Some PAHs are known to be human carcinogens. Creosote can leach into adjacent soil and groundwater over time. It is possible that areas along the railroad were used as rail-tie preparation areas where large amounts of creosote could have been used.

Due to the long history of agricultural development and rail operations in the area and the potential use of creosote for the railroad construction, soil contamination is known to exist along the proposed MBSST Network corridor [discussed in greater detail under *Other On-Site and Adjacent Hazards* in Section 4.8.1(b), below].

b. Hazards Associated with Adjacent Land Uses. Adjacent land uses with the highest potential for exposing users of the MBSST Network project to hazardous materials include agricultural operations in the northern and Watsonville reaches and adjacent industrial uses in the central and Watsonville reaches. A variety of chemicals are used on agricultural crops in Santa Cruz County. Chemicals are used as pesticides, herbicides, and nutrients. Due to the large amount of agricultural land uses, the variety of crops, and the changing agricultural techniques used in the area, compilation of a complete list of the chemicals used is beyond the scope of this analysis. Chemicals used in industrial operations are dependent on the type of operation and



associated manufacturing processes. The potential hazards associated with these and other adjacent land uses are described below.

Agricultural Pesticides. In general, pesticide use can result in health impacts to those who come in contact with such chemicals. The Santa Cruz County Agricultural Commissioner's office retains a registry of pesticides used on individual agricultural parcels in the County. For this analysis, countywide records of pesticide use dating back to 2006 were obtained from the Agricultural Commissioner's office.

The California Office of the U.S. Environmental Protection Agency (Cal EPA), Department of Pesticide Regulations (DPR) is the state agency that sets regulatory standards for pesticides, whether in homes or agriculture. DPR establishes regulatory practices that determine when and how a pesticide is applied and establishes safety precautions. The California Occupational Health and Safety Administration (Cal/OSHA) also establishes workplace standards for pesticide use to protect farm workers. DPR uses "signal words" to classify pesticides. This classification ranges, in order of decreasing severity, from "danger," to "warning," to "caution". These classifications are based upon testing of the entire formulation, active and inactive ingredients, and indicate acute, short term health hazards, such as those resulting from inhalation, eye contact, ingestion, dermal absorption, and dermal irritation. Additionally, the long term effects of exposure to some of these pesticides may be considered carcinogenic. A lifetime exposure to a pesticide (70 years) is assumed for a carcinogen.

Users of the trail can be exposed to agricultural chemicals through ingestion, inhalation, and dermal contact. The most likely paths of exposure are ingestion and inhalation of the chemicals during and after they are applied to the crops, either by aircraft or by more conventional methods. Some chemicals used can produce acute effects on humans exposed to elevated levels. For instance, methyl bromide has been publicized as creating nausea and other effects for residents adjacent to areas in which fumigation has occurred. Initial acute effects may include headache, dizziness, nausea or vomiting, chest and abdominal pain, and irritated eyes, nose, and throat (Gehring and Associates, 1991). With sufficient exposure, symptoms of slurred speech, blurred vision, temporary blindness, mental confusion, and sweating may occur (Gehring and Associates, 1991).

Symptoms of acute exposure to organophosphate may include: numbness, tingling sensations, incoordination, headache, dizziness, tremor, nausea, abdominal cramps, sweating, blurred vision, difficulty breathing or respiratory depression, and slow heartbeat. Very high doses may result in unconsciousness, incontinence, and convulsions or fatality. Persons with respiratory ailments, recent exposure to cholinesterase inhibitors, cholinesterase impairment, or liver malfunction are at increased risk from exposure. Some organophosphates may cause delayed symptoms beginning one to four weeks after an acute exposure, which may or may not have produced immediate effects.

Methyl Bromide. Pesticide use permits provided by the Santa Cruz County Agricultural Commissioner's office indicate that methyl bromide has been used in the County as recently as October 2012. Numerous application of methyl bromide (product name: Terr-o-gas) are recorded every year from 2006 through 2012 (or every year of record provided by the Agricultural Commissioner's office), and are primarily applied to strawberry fields via ground or fumigation



application. As permit records indicate that methyl bromide has been applied throughout Santa Cruz County, it is likely that this pesticide may be used in the vicinity of the MBSST Network.

Methyl bromide is a pesticide of particular concern that has demonstrable health effects. Methyl bromide is a broad spectrum pesticide used in the control of pest insects, nematodes, weeds, pathogens, and rodents. When used as a soil fumigant, methyl bromide is injected into the soil at a depth of 12 to 24 inches before a crop is planted. This will effectively sterilize the soil, killing the vast majority of soil organisms. Immediately after the methyl bromide is injected, the soil is covered with plastic tarps, which temporarily hold the methyl bromide in the soil.

Methyl bromide is toxic not only to the target pests, but to non-target organisms as well. Human exposure to high concentrations of methyl bromide can result in central nervous system and respiratory system failure, as well as specific and severe deleterious actions on the lungs, eyes, and skin. Exposure of pregnant women may result in fetal defects. The pesticide, however, has been found to be non-detectable in the soil after a few days to a few weeks after application.

The amount of methyl bromide produced and imported in the U.S. was reduced incrementally until it was phased out in January 1, 2005, pursuant to our obligations under the *Montreal Protocol on Substances that Deplete the Ozone Layer* (Protocol) and the Clean Air Act (CAA). Allowable exemptions to the phase out include 1) the Quarantine and Preshipment (QPS) exemption, to eliminate quarantine pests, and 2) the Critical Use Exemption (CUE), designed for agricultural users with no technically or economically feasible alternatives.

Each year, the U.S. EPA solicits applications for CUEs from methyl bromide users. The U.S. Government, after reviewing the applications, seeks authorization for those uses from the Parties to the Montreal Protocol. Once the Parties authorize critical uses and an amount of methyl bromide for those critical uses, U.S. EPA publishes a rule allowing for the production of critical use Methyl Bromide. Each round takes up to 3 years.

California Code of Regulations Section 6447 places restrictions on methyl bromide use in fields. This includes: requiring 48 hour notification to the Agricultural Commissioner and adjacent land owners; outlining requirements for establishing an inner and an outer buffer zone (of a minimum 30 feet and 60 feet, respectively) for a period of 36 hours, subject to the approval of the Agricultural Commissioner; and prohibiting certain application methods.

Methidathion. Aside from methyl bromide, one of the most hazardous agricultural chemicals used in Santa Cruz County is methidathion (common name: Supracide). No human contact with the sprayed areas is allowed for 30 days after using of this pesticide. Methidathion has been applied every year between 2007 and 2011 on artichoke crops in the southernmost portion of Santa Cruz County, and may therefore be applied near the Watsonville reach of the MBSST Network.

Methidathion is an organophosphate insecticide, which functions by inhibiting the action of acetylcholinesterase (AChE) in nerve cells. Organophosphate pesticides can be absorbed by all routes, including inhalation, ingestion, and dermal absorption. Repeated or prolonged exposure to organophosphates may result in the same effects as acute exposure including the delayed symptoms. Other effects reported in workers repeatedly exposed include impaired memory and

concentration, disorientation, severe depressions, irritability, confusion, headache, speech difficulties, delayed reaction times, nightmares, sleepwalking and drowsiness or insomnia. An influenza-like condition with headache, nausea, weakness, loss of appetite, and malaise has also been reported.

Industrial and Commercial Uses. Users of hazardous materials include commercial manufacturing, petroleum exploration, industrial fabrication, biotechnology, and agribusinesses. Potentially hazardous materials used by businesses may include petroleum based fuels, chlorinated solvents, acrylic coatings, corrosive or caustic additives, and to a lesser extent, chemical fertilizers, pesticides, and herbicides. Users of hazardous materials include gas stations and other automotive service-related business, utilities, agribusinesses, and other commercial and industrial uses.

The proposed MBSST Network passes by industrial areas in segment 7 of the central reach, where the trail enters the City of Santa Cruz, and in segments 18 and 19 in the Watsonville reach. Industrial uses along segment 7 include construction and auto storage. Segment 7 would also pass by the Santa Cruz Wastewater Treatment Facility, located near Neary Lagoon Park. Uses along segments 18 and 19 include lumber, construction, and building materials sales and storage; metal fabrication; greenwaste recovery; and automotive repair. The central reach additionally passes through commercial areas in Santa Cruz, Live Oak, Capitola, and Aptos. These areas may include commercial uses such as automotive services, gas stations, dry cleaners, and other uses that utilize hazardous chemicals.

Household Products. The most common hazardous materials are those found or used in the home. Waste oil is a common hazardous material that is often improperly disposed and can contaminate surface water through runoff. Other household hazardous wastes (used paint, pesticides, cleaning products, and other chemicals) are common and often improperly stored in garages and homes.

Other On-Site and Adjacent Hazards. A Phase I Environmental Site Assessment (ESA) was completed for the Davenport and Santa Cruz Branch Rail Lines by Geomatrix Consultants (March 1997) to identify features or historical uses or activities that could be associated with environmental impairment of soil and groundwater along the rail corridor. The Phase I ESA included a site reconnaissance; review of publicly available and Southern Pacific Railroad Company (SPRCo) historical information; review of publicly maintained and available records pertaining to on-site and nearby environmental investigations; review of chemical usage and the possible presence of underground storage tanks along the Santa Cruz Branch Rail Line right-of-way and at facilities immediately adjacent to the right-of-way; interviews with SPRCo personnel regarding general railroad operations; and review of regional geology and hydrogeology. The Phase I ESA subdivided the rail corridor into four sections. The on- and off-site features that could potentially affect environmental conditions along each of these sections are summarized below.

Davenport to the City of Santa Cruz. This section from the Phase I ESA generally corresponds to the MBSST Network northern reach. Several features in this section potentially could affect environmental conditions at the site, including: (1) potential chemical discharge through a drainage tunnel that runs beneath the site and originates at a cement factory in



Davenport (which was closed in 2010); (2) a loading shed and freight depot where chemicals may have been handled at Davenport Station; and (3) an engine house and potential underground storage tank (UST) near the trail's intersection with Scaroni Road. No other potential environmental features were observed in this section of the rail corridor during the Phase I ESA field reconnaissance. However, nearby environmental cases potentially could affect groundwater beneath the rail corridor in this section.

Santa Cruz City Limits. The Phase I ESA identified several features of potential environmental concern along the rail corridor within the City of Santa Cruz. These features include a tool house, roadmasters' car house, scrap bin, and freight house at the Santa Cruz Station (near the intersection of Beach and Cliff Streets), an in-ground oil reservoir near the Casino Station (also near the intersection of Beach and Cliff Streets), and a freight house at the Seabright Station (near the corridor's intersection with Seabright Avenue). Off-site historical features such as the maintenance facilities at the Santa Cruz Station and gas and oil facilities in the Santa Cruz Beach Boardwalk area also could affect groundwater conditions beneath the rail corridor.

The Phase I ESA site reconnaissance observed a well along the rail corridor at the western Santa Cruz City Limits, suggesting that groundwater is being monitored in this area and may be impacted. Atypical soil staining between the railroad tracks and surrounding ballast at West Cliff Drive and Beach Street suggests that a petroleum-based spill occurred in this area. Miscellaneous dumping of debris in this section, and reported dumping along the corridor near Mission Industrial Lands (in the western portion of Santa Cruz), also could affect environmental conditions along the rail corridor. Finally, other nearby environmental cases could affect groundwater beneath the rail corridor in this section.

Capitola and Aptos to Leonard's Gulch. The Phase I ESA historical review showed that a freight house was present near where the rail corridor intersects with 47th Avenue in Capitola. A car repair facility, paint shop, and boat repair facility also historically encroached into the rail corridor near 7th Avenue in the Twin Lakes area. No specific features that suggest potential environmental impacts were observed during the Phase I ESA site reconnaissance of this section; however, nearby environmental cases may affect groundwater beneath the rail corridor.

Leonard's Gulch to Salinas Road near Watsonville Junction. The Phase I ESA historical review showed features of potential environmental concern to the southernmost section of the rail corridor, which generally coincides with the MBSST Network Watsonville reach. These features include two in-ground oil tanks that are potentially within the rail corridor south of the rail line's intersection with Riverside Drive in Watsonville, and numerous nearby off-site features, including a tool house and gasoline tank at the Watsonville Station, oil tanks, utility company facilities, and chemical tanks. Features of potential environmental concern also were observed during the Phase I ESA site reconnaissance, including staining (near the proposed trail corridor's intersection with Beach Street in Watsonville and near the intersection of West Beach Street and Lee Road, west of Highway 1), a discharge onto the corridor of unknown composition from Granite Construction (near Harvest Drive in Watsonville), and evidence of runoff from Drisco Pipe onto the rail corridor (near Industrial Road in Watsonville). Finally, nearby environmental cases could also affect the corridor.

The Phase I report recommended that a Phase II investigative program be performed to evaluate whether historical and current features affect the MBSST Network corridor, including soil sampling, geophysical surveys, and well sampling. A Phase II Investigation was conducted by AMEC Geomatrix, Inc. (December 2009). In addition, because Phase II soil sampling identified high levels of arsenic in the soil, a Human Health Risk Assessment for Arsenic was also prepared (AMEC Geomatrix, Inc., December 2009).

The Phase II investigations consisted of advancing soil borings to collect soil samples at targeted locations along the MBSST Network corridor and at systematic sampling locations for general corridor coverage outside of the targeted sampling locations. In addition, the 2009 investigation included the collection of additional systematic soil samples for arsenic analysis to evaluate the distribution of arsenic in shallow soil along the rail corridor and to calculate a site-specific background concentration of arsenic in support of a preliminary human health risk assessment (HHRA).

The results of the Phase II investigations along the Branch Line right-of-way identified two primary environmental impacts, which are described below.

Petroleum Hydrocarbons. Soil is impacted with elevated concentrations of petroleum hydrocarbons in the drainage ditch along the railroad right-of-way adjacent to the Granite Construction Company facility in Watsonville (located along segment 18 of the Watsonville reach). Based on the analytical results, petroleum hydrocarbon impacts that exceed relative screening levels extend to depths of at least 12 feet below ground surface (bgs), but are generally less than 20 feet bgs. The lateral extent of petroleum hydrocarbon impacts extends over a distance of at least 90 feet along the drainage ditch. Based on the findings, it is likely that the petroleum hydrocarbon impacts are generally confined to the area of the drainage ditch and appear to be related to a discharge pipe emanating from the Granite Construction facility.

Arsenic. The chemical arsenic, while occurring naturally in the soil, is extremely toxic to people. Arsenic can cause acute and long-term health effects and can lead to death. Arsenic does not decompose, biodegrade, or move downward through soils. Arsenic concentrations have increased because of human activities, most notable being the historical usage of arsenical pesticides, which are now outlawed in the United States. Before being outlawed, railroad companies used these arsenical pesticides frequently, and high concentrations of arsenic are often found near railroad tracks. Soils defined as contaminated with arsenic contain concentrations of elements exceeding the existing ambient background levels.

According to the Phase II report, arsenic is generally distributed in shallow soil (less than or equal to 1.5 feet bgs) along the Santa Cruz Branch Rail Line right-of-way above the calculated site-specific background concentration of 14.4 milligrams per kilogram (mg/kg) and is likely a result of railroad operations such as the potential application of arsenical herbicides along the railroad. Although the results of the risk assessment for arsenic in soil indicate that the incremental cancer risk to construction workers and recreational users is within the U.S. EPA's target cancer risk range, arsenic was detected at some locations at concentrations that could require special handling during construction activities (e.g., disposal classification).

Additionally, chromium, lead, and pesticides were detected in some samples at concentrations that exceeded the hazardous waste screening criteria. Soil at these areas could require special handling (e.g. disposal classification as a State or Federal hazardous waste) during construction activities.

c. Other Potential Hazards. Other hazards that have the potential to impact the proposed MBSST Network and its users are hazardous materials transported on rail or roadways and underground utilities.

Hazardous Materials Transport. Both the U.S. EPA and the U.S. Department of Transportation (DOT) regulate the transportation of hazardous waste and material, including transport via rail and highway. The U.S. EPA administers permitting, tracking, reporting, and operations requirements established by the Resource Conservation and Recovery Act (RCRA). DOT regulates the transportation of hazardous materials through implementation of the Hazardous Materials Transportation Act. This Act administers container design, and labeling and driver training requirements. These established regulations are intended to track and manage the safe interstate transportation of hazardous materials and waste.

The Santa Cruz Branch Rail Line historically transported lumber, quarried material, and agricultural products out of the Santa Cruz area. Incoming freight included coal and gypsum for delivery to the cement factory located in Davenport. Following the closure of the cement plant in 2010, freight business on the rail line was reduced by 90 percent. Currently, there is no daily freight service on the rail line outside of the Watsonville/Pajaro area. There is a seasonal passenger rail service that operates between the City of Santa Cruz ~~and~~ to the northern reach, south of Davenport and the City of Watsonville to east of Manresa State Beach. This seasonal service operates two to four passenger trains per day, with a higher number of trips on weekends. Within the Watsonville/Pajaro area, there are freight trips every weekday, and weekends as needed. These trips are localized and do not extend outside of the Watsonville/Pajaro area. The rail line in Watsonville is used to transport perishables (including raspberries, strawberries, and other agricultural products), lumber and biofuels. There is currently no rail operation between Watsonville and Santa Cruz, except when needs arise for a special movement of equipment.

There is the possibility an accidental spill of hazardous materials could have occurred in the past, during the time when the railway was more active. According to the Phase I ESA, trains along the Santa Cruz Branch Rail Line have occasionally derailed; however, only one derailment was reported to have resulted in chemical spillage. This derailment, on December 2, 1987, spilled 200 to 300 gallons of diesel fuel at Murray Street and Brooke Avenue between Seabright Avenue and East Cliff Drive. The Santa Cruz Sentinel reported that the Santa Cruz County Health Services Agency, Environmental Health Service (SCHSA) was monitoring the cleanup of the diesel-affected soil, and that samples would be taken to confirm that the cleanup was completed. Several derailments occurred along the rail corridor after the Phase I report was completed. According to the Phase II report, no chemicals or hazardous materials were released during these derailments.

Transportation of hazardous materials on highways falls under federal legislation; however, authority is relegated to various state and local agencies that are focused on specific aspects of



hazardous materials and transportation. The Hazardous Waste Control Act establishes the California Department of Health Services as the lead agency in charge of the implementation of the RCRA program. State and local agencies such as the California Highway Patrol (CHP), State of California Department of Transportation (Caltrans), and City and County Fire Departments are responsible for the enforcement of state and federal regulations and responding to hazardous materials transporting emergencies. The CHP establishes state and federal hazardous material truck routes and has lead responsibility over hazardous material spills on State highways.

Truck routes are designed to provide access to areas that utilize truck service (primarily commercial and industrial areas). State-designated truck routes within the Santa Cruz County include Highway 1 and Highway 129 (Caltrans, 2012). In addition, the City of Santa Cruz has designated Highway 1/Mission Street, Highway 17, Bay Street north of Mission, Empire Grade west of Bay, Highway 9, Morrissey Boulevard, and Soquel Avenue as truck routes. The City of Capitola Municipal Code Section 10.48.010 designates any street or portion of a street that is permitted to carry vehicles exceeding three tons as a truck route. The City of Watsonville designates the following roadways as truck routes:

- *Airport Boulevard from Highway 152 to City Limit;*
- *Highway 152 (Main Street) from Airport Boulevard to City Limit;*
- *West Lake Avenue from Walker Street to Main Street;*
- *Highway 152 (East Lake Avenue) from Main Street to City Limit;*
- *Highway 1 (Cabrillo Highway) from Highway 52 to Highway 129;*
- *South Green Valley Road from Highway 1 to Highway 152;*
- *West Beach Street from Lee Road to Lincoln Street to Highway 152;*
- *Lee Road across City Limits;*
- *Industrial from West Beach Street to Highway 129;*
- *Harvest Drive from West Beach Street to Highway 129;*
- *Walker Street from Ford to West Front;*
- *Ford and Kearney from Walker Street to Walker Street; and*
- *Highway 129 (Riverside Drive) from Highway 1 to City Limit.*

Under current State regulations, trucks transporting hazardous materials or wastes are allowed to use normal truck routes.

Underground Utilities. Existing surface and subsurface utilities within the Santa Cruz Branch Rail Line right-of-way include active and abandoned railroad communications cable, signal and communication boxes, fiber-optic cables, water and sewer lines, and telephone lines. In addition, the proposed trail may cross over utility lines buried beneath any of the 84 roadway crossings. A rupture of the pipelines could expose trail users, maintenance workers, and nearby residences to flammable and toxic substances (natural gas or oil).

Wildland Fire Hazards. Wildfires are large-scale brush and grass fires in undeveloped areas. Wildfires are usually caused by human activities such as equipment use and smoking, and can result in loss of valuable wildlife habitat, soil erosion, and damage to life and property. The MBSST Network corridor travels through areas of open space and wildland areas, which pose potential fire hazard to adjacent development.



The level of wildland fire risk is determined by a number of factors, including:

- *Frequency of critical fire weather;*
- *Percentage of slope;*
- *Existing fuel (vegetation, ground cover, building materials);*
- *Adequacy of access to fire suppression services; and*
- *Water supply and water pressure.*

The California Department of Forestry and Fire Protection (CalFire) has mapped the relative wildfire risk in areas of significant population by intersecting residential housing density with proximate fire threat. The CalFire Fire Hazard Severity Zone map for state responsibility areas (SRAs) in Santa Cruz County (CalFire, November 2007) shows three risk levels: moderate, high, and very high. According to this map, the northern reach contains a mix of moderate and high hazard severity designations. The central and Watsonville reaches are both designated as local responsibility areas. The CalFire Fire Hazard Severity Zone map for local responsibility areas (LRAs) in Santa Cruz County (CalFire, October 2007) shows four designations: moderate, high, very high, and unzoned. According to this map, the central reach contains both moderate and high fire hazard designations through segment 6, part of segment 7 and segment 11 near New Brighton State Beach, while the remainder of the reach (which is more urbanized) is unzoned. The Watsonville reach is primarily designated as having moderate and high fire hazards, while the portion of the trail within the City of Watsonville is unzoned.

Asbestos and Lead. The proposed MBSST Network project would include numerous railroad bridge/trestle crossings. Bridge crossing treatment types could include retrofitting existing bridges or constructing new separate trail bridges parallel to the existing rail bridge structure.

All of the existing railroad bridges and trestles along the MBSST Network corridor were constructed between 1903 and 1977 (RTC, 2012). Due to their age, many of these bridges may have been built with materials containing friable asbestos and lead-based paint. Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials (ACMs) are damaged or disturbed. When these fibers get into the air they may be inhaled into the lungs, where they can cause significant health problems (U.S. EPA, September 2008). Beginning in the late 1970s, asbestos was phased out for building and construction purposes. If present in the existing bridge structures, these ACMs would require abatement prior to renovation. If not properly abated in advance of renovation, workers and surrounding receptors may be exposed to friable asbestos.

Lead is a highly toxic metal which was used for many years as a component of consumer products. Sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, urban dust, and secondary lead smelters. Lead is one of the most common hazards that humans are exposed to in their daily lives and may be present in hazardous concentrations in food, water, and air. Excessive exposure can result in the accumulation of lead in the bloodstream, soft tissues and bones. Children are particularly susceptible to lead-related health problems as it is easily absorbed into developing systems and organs. Lead poisoning is the leading environmentally induced illness in children and

continues to pose a potential public health risk. In 1978, the federal government required the reduction of lead in house paint to less than 0.06 percent (600 parts per million). However, some paints manufactured after 1978 for industrial or marine uses legally contain more than 0.06 percent lead. Lead paint used on older structures continues to pose a public health hazard unless and until it is abated. Inspection, testing, and removal (abatement) of lead-containing building materials must be performed by State-certified contractors who are required to comply with applicable health and safety and hazardous materials regulations.

Historic travel on heavily traveled highways can result in hazardous concentrations of aeri-ally deposited lead (ADL) in soils adjacent to the highways. Even though leaded fuel has been prohibited in California since the 1980's, ADL can still be found along highways that were in use prior to that time. In California, soil within Caltrans right of way that contains hazardous waste concentrations of ADL can be reused under the authority of a variance issued by the Department of Toxic Substances Control (DTSC). The current variance applies to all 12 Caltrans districts.

The most heavily traveled roadway near the MBSST Network project is Highway 1. Annual average daily trips (AADT) along this Highway range from a low of 4,000 (near the San Mateo County line) to a high of 98,000 (through the City of Capitola) (California Department of Transportation, December 2012). At this level of travel, aeri-ally deposited lead concentrations near Highway 1 would not be expected to exceed public health standards.

d. Regulatory Setting. The management of hazardous materials and hazardous wastes is regulated at federal, state, and local levels through programs administered by the U.S. Environmental Protection Agency (U.S. EPA), agencies within the California Environmental Protection Agency (CalEPA), such as the Department of Toxic Substances Control (DTSC), federal and state occupational safety agencies, Monterey Bay Unified Air Pollution Control District (MBUAPCD), and Santa Cruz County Environmental Health Services.

Federal. The U.S. EPA is responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. The federal regulations are codified primarily in Title 40 of the Federal Code of Regulations. The primary legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and the Emergency Planning and Community Right-to-Know (SARA Title III). These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, transport, or dispose of hazardous materials.

The Hazardous Materials Transportation Act of 1975 (HMTA) is the major transportation-related statute regulating the transportation of hazardous cargo. The HMTA empowers the U.S. Department of Transportation (DOT) with regulatory and enforcement authority to provide adequate protection against the risks to life and property inherent in the transportation of hazardous material in commerce. For materials that are designated as hazardous, specific requirements pertaining to the packaging, labeling, and transportation apply to any person or business transporting a hazardous material.



The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety. OSHA requires training for hazardous materials operators, which includes personal safety, hazardous materials storage and handling procedures, and emergency response procedures.

Other relevant federal laws include the Hazardous and Solid Waste Amendments Act (HSWA) regarding hazardous waste management, the Toxic Substances Control Act (TSCA), pertaining to the tracking and screening of industrial chemicals, and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which controls pesticide distribution, sale and use.

State. In California, the DTSC is authorized by the U.S. EPA and CalEPA to enforce and implement federal hazardous waste laws and regulations. Requirements place “cradle-to-grave” responsibility for hazardous waste disposal on the shoulders of hazardous waste generators. Generators must ensure that their wastes are disposed properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

California regulations pertaining to hazardous materials equal or exceed federal regulations. In January 1996, Cal EPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program governing (1) hazardous waste generators and hazardous waste onsite treatment, (2) underground storage tanks, (3) above-ground storage tanks, (4) hazardous materials release response plans and inventories, (5) risk management and prevention programs, and (6) Unified Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a designated local agency – the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. The Santa Cruz County Environmental Health Services is the designated CUPA for the Santa Cruz County, including all cities within the County.

State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed, and in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. California’s Hazardous Materials Release Response Plans and Inventory Law, sometimes called the “Business Plan Act,” aims to minimize the potential for accidents involving hazardous materials and to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on site, to prepare an emergency response plan, and to train employees to use the materials safely.

Along with DTSC, the Regional Water Quality Control Board (RWQCB), which operates under the jurisdiction of Cal EPA, is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations applicable to hazardous materials are contained in Title 27 of the California Code of Regulations (CCR). Additional state regulations applicable to hazardous materials are contained in Title 22



of the CCR. Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

Transportation of hazardous materials and wastes is regulated by Title 26 of the CCR. The California Department of Transportation (Caltrans) is the primary regulatory authority for the interstate transport of hazardous materials and establishes safe handling procedures for packaging, marking, labeling, routing, etc. The California Highway Patrol and Caltrans enforce federal and State regulations and respond to hazardous materials transportation emergencies.

A “Uniform Hazardous Waste Manifest” is required by DTSC and must accompany most hazardous waste before transporting any waste off site. The manifest travels with the hazardous waste from the point of generation, through transportation, to the final treatment, storage and disposal facility. If a discharge or spill of hazardous waste occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (i.e., notify local authorities, dike the discharge area), and shall be responsible for the discharge/cleanup, pursuant to Title 22 of the California Code of Regulations, Sections 66263.30 and 66263.31.

With respect to worker safety regulations at the state level, the California Department of Industrial Relations, Division of Occupational Safety and Health, formerly known as Cal/OSHA, is charged with enforcement of state regulations and supervision of workplaces in California that are not under direct federal jurisdiction. State worker health and safety regulations applicable to construction workers include training requirements for hazardous waste operations and emergency response, all of which equal or exceed their federal counterparts.

Although there are numerous state policies dealing with hazardous waste materials, the most comprehensive is the Tanner Act (Assembly Bill [AB] 2948) adopted in 1986. The Tanner Act governs the preparation of hazardous waste management plans and the siting of hazardous waste facilities in the state. The act also mandates the adoption of a Hazardous Waste Management Plan by every county in the state that must include provisions defining: (1) the planning process for waste management; (2) the permit process for new and expanded facilities; and (3) the appeal process to the state available for certain local decisions.

Regional.

Monterey Bay Unified Air Pollution Control District (MBUAPCD). Regarding hazardous air emissions, the MBUAPCD implements the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Achievable Control Technology (MACT) requirements through the federal operating permit program, pursuant to MBUAPCD Rule 218. In addition, MBUAPCD’s permitting program includes a “Best Control Technology” (BCT) review under MBUAPCD Rule 1000, Permit Guidelines and Requirements for Sources Emitting Toxic Air Contaminants. This rule covers proposed new or reconstructed major sources of federal hazardous air pollutants, toxic air contaminants, and carcinogenic toxic air contaminants.

In compliance with state law, the MBUAPCD also administers the AB 2588 Air Toxics “Hot Spots” Program. Facilities must report their toxic air contaminant emissions and if the



MBUAPCD determines the facility poses a potential public health risk, the facility must perform a health risk assessment (HRA). An HRA includes an analysis of toxic air contaminant emissions and characterizes human health risks as a result of the estimated exposures. If the estimated health risks exceed threshold levels, the public in the affected area must be notified and steps taken to reduce emissions.

Santa Cruz County.

Santa Cruz County Environmental Health. Santa Cruz County Environmental Health Services is designated by Cal EPA as the Certified Unified Program Agency (CUPA) within the geographic boundaries of the County and is responsible for enforcing the local ordinance and state laws pertaining to use and storage of hazardous materials, including the issuance and administration of Hazardous Materials Management Plans (HMMPs).

Santa Cruz County Agricultural Commissioner. The Santa Cruz County Agricultural Commissioner's office regulates and enforces Cal EPA Department of Pesticide Regulations (DPR) requirements through site visits and the permitting process. The Santa Cruz County Agricultural Commissioner's office has not established recommendations for land use setbacks, or buffers, between the land on which other pesticides are applied and surrounding land uses. However, the Agricultural Commissioner does require that all pesticides be used pursuant to the manufacturers' label requirements unless more restrictive California or Santa Cruz County conditions apply. Pesticides must be sprayed so as to prevent drift onto nearby properties.

Santa Cruz County General Plan. The Public Safety and Noise Element of the Santa Cruz County General Plan contains objectives and policies related to hazardous and toxic materials, hazardous waste management, and fire hazards. The Conservation and Open Space Element additionally contains objectives and policies related to pesticides. Objectives and policies applicable to the MBSST Network project are listed below.

Policy 5.13.23 *Agricultural Buffers Required. Require a 200 foot buffer area between commercial agricultural and non-agricultural land uses to prevent or minimize potential land use conflicts, between either existing or future commercial agricultural and non-agricultural land uses.*

Policy 5.13.26 *Windbreaks. Buffers shall include windbreaks designed to reduce or eliminate the hazard of pesticide drift or other conflicts based on prevailing wind direction.*

Objective 6.5 *Fire Hazards. To protect the public from hazards of fire through citizen awareness, mitigating the risks of fire, responsible fire protection planning and built-in systems for fire detection and suppression.*

Policy 6.5.7 *Certification of Adequate Fire Protection Prior to Permit Approval. Require all land divisions, multi-unit residential complexes, commercial and industrial complexes, public facilities and critical utilities to obtain certification from the appropriate fire protection agency that adequate fire protection is available, prior to permit approval.*



- Policy 6.5.8 *Public Facilities Within Critical Fire Hazard Areas. Discourage location of public facilities and critical utilities in Critical Fire Hazard Areas. When unavoidable, special precautions shall be taken to ensure the safety and uninterrupted operation of these facilities.*
- Objective 6.6 *Hazardous and Toxic Materials. To eliminate, to the greatest degree possible, the use of hazardous and toxic materials, and where it is not feasible to completely eliminate the use of such materials, then to minimize the reduction in the use of such materials, so as to ensure that such materials will not contaminate any portion of the County's environment, including the land, water, and air resources of the County.*
- Policy 6.6.1 *Hazardous Materials Ordinance. Maintain the County's Hazardous Materials ordinance, placing on the users of hazardous and toxic materials the obligation to eliminate or minimize the use of such materials wherever possible, and in all cases to minimize the release, emission, or discharge of hazardous materials to the environment, and properly handle all hazardous materials and disclose their whereabouts. Further, maintain the County's ordinance relating to ozone-depleting compounds. Ensure that any amendment of existing ordinance provisions is based on a finding that the amendments will provide protection to the environment and the community against toxic hazards that is equal to or stronger than existing provisions.*
- Policy 6.7.4 *Conformance to Federal, State and Local Siting Standards. Require all hazardous waste land disposal facilities to conform to the siting standards contained in state statutes as well as conform to the General Plan and LCP Land Use Plan and Zoning ordinances of the County of Santa Cruz.*
- Policy 6.7.12 *Emergency Response/Safe Transportation Routes. Locate facilities of any type so as to minimize distances to major transportation services. Locate all facilities in areas where the fire departments are trained to respond to hazardous materials accidents. Road networks leading to major transportation routes should not pass through residential neighborhoods, should minimize residential frontages in other areas, and shall be demonstrated to be safe with regard to road design and construction, weight allowances, accident rates, excess traffic, etc.*

Santa Cruz County Municipal Code. Chapter 7.100 of the Santa Cruz County Municipal Code regulates hazardous materials, hazardous waste, and underground storage tanks. The ordinance is intended to protect human health, safety, and the environment by promoting best available industrial processes and best available practical control technology to minimize or eliminate the use of hazardous materials in the County, and minimize or eliminate potential contamination by hazardous materials. The ordinance requires that any permitted use of hazardous materials is obligated to strictly control discharges and releases. The ordinance further requires that hazardous materials users monitor any discharges into the environment and keep records on the effectiveness of their hazardous materials management practices as a means of enforcing the obligations established by this chapter. The Santa Cruz County Environmental Health Services is the Certified Unified Program Agency (CUPA) responsible for



enforcing the Hazardous Materials-Hazardous Waste-Underground Storage Tanks Ordinance, as well as state and federal regulations.

City of Santa Cruz.

City of Santa Cruz General Plan 2030. The Hazards, Safety, and Noise chapter of the City of Santa Cruz General Plan contains one goal, four policies, and 13 specific actions related to reducing impacts related to hazardous materials and regulating hazardous wastes. The goal, policies, and actions relevant to the MBSST Network project are listed below.

<u>Goal HZ4</u>	<i>Reduced danger and impacts from hazardous materials.</i>
<u>Policy HZ4.1</u>	<i>Regulate hazardous wastes with respect to potential leakage, explosions, fires, escape of harmful gases, or formation of new hazardous substances.</i>
<u>Action HZ4.1.4</u>	<i>Reduce the use of toxic materials in the community and prevent their disposal into the air, water, or soil.</i>
<u>Policy HZ4.2</u>	<i>Ensure proper handling and disposal of hazardous waste.</i>
<u>Policy HZ4.4</u>	<i>Reduce the risk of exposure to hazardous materials from sites being developed or redeveloped.</i>

City of Santa Cruz Municipal Code. The City's Hazardous Materials Ordinance regulates and enforces the proper storage and handling of hazardous materials. Santa Cruz City Municipal Code Chapter 6.50, Hazardous Materials, outlines procedures for any person or business that uses hazardous materials within the City. Each user is required to obtain and keep current a hazardous materials permit and is required to handle, control, and store hazardous materials in accordance with an approved Hazardous Materials Management Plan (HMMP). Depending on the quantity of solid, liquid and gaseous hazardous materials, a user would submit either a short or standard form HMMP. A standard form HMMP requires more detailed information be provided, including monitoring and inspections. In addition to the HMMP, the health officer may request additional information deemed necessary to protect the public health.

The City's Fire Department works in conjunction with County Environmental Health in responding to reports of hazardous materials spills and accidents, enforcing hazardous materials regulations and enforcing the City's fire code as it relates to the use and storage of hazardous materials.

City of Capitola.

City of Capitola General Plan. The Capitola General Plan is currently being updated, and a Public Review Draft General Plan is anticipated for June 2013. The current General Plan was adopted in 1989. The Safety Element of the existing Capitola General Plan contains three policies related to hazards and hazardous materials. None of these policies are applicable to the proposed MBSST Network project. The Safety Element contains the following policies related to fire hazards.



Policy 7 *Fire hazards shall be mitigated where appropriate with proper siting, use of fire-resistant materials and landscaping, and/or installation of early warning systems (alarms and sprinklers).*

Capitola Municipal Code. The City of Capitola has adopted a Hazardous Materials Ordinance (Chapter 8.42) which requires that the City be notified of all use, storage, and transport of hazardous materials. The City also cooperates with the County of Santa Cruz and the Central Fire District in responding to an emergency hazardous material spill. Under the first response system, the Central Fire District personnel would respond to a hazardous material spill in the City.

City of Watsonville.

City of Watsonville General Plan. An updated City of Watsonville General Plan was adopted by the City Council in January 2013, but was subsequently challenged in court and is on hold until resolution on the legal issues can be reached. Therefore, at this time, the 2005 General Plan remains in effect. The existing 2005 General Plan, adopted in 1994, includes an Environmental Resource Management Element which contains goals, policies, and implementation measures related to hazardous materials. The goals and policies applicable to this project are discussed below.

Goal 9.11 *Hazardous Materials. Protect the air, water, soil, and biotic resources from damage by exposure to hazardous materials through aggressive management of hazardous materials.*

Policy 9.1 *Hazardous Materials. The City shall protect the natural environment through aggressive enforcement and compliance with hazardous materials plans.*

Monterey County. Segment 20 of the proposed MBSST Network project, which is 0.74 miles long, would be located in Monterey County. The purpose of this segment is to provide a regional connection to the Monterey County section of the Monterey Bay Sanctuary Scenic Trail. Implementation of this section would require cooperation and coordination with the Transportation Agency for Monterey County (TAMC) and the County of Monterey. Monterey County General Plan goals and policies, as well as Monterey County Municipal Code regulations, would apply to this segment.

4.8.2 Impact Analysis.

a. Methodology and Significance Thresholds. Assessment of impacts is based on: 1) review of site information and conditions; 2) a review of the Phase I ESA for the Davenport and Santa Cruz Branch Rail Lines (Geomatrix Consultants, March 1997) and the Phase II Investigation and Human Health Risk Assessment for Arsenic (AMEC Geomatrix, Inc., December 2009); 3) review of pesticide application records; and 4) review of the Santa Cruz County General Plan, the City of Santa Cruz General Plan 2030, the Capitola General Plan, the City of Watsonville General Plan and other County or city information regarding hazards and hazardous materials issues.



Evaluation Criteria. The following thresholds are based on Appendix G of the *State CEQA Guidelines*. A significant impact would occur if the proposed MBSST Network project would result in any of the following conditions:

- 1) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;*
- 2) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;*
- 3) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment; and/or*
- 4) *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.*

It should be noted that the proposed MBSST Network project would not routinely transport, use, or dispose of hazardous materials, nor would it emit hazardous emissions. In addition, although the Watsonville Municipal Airport is located approximately 1.5 miles northeast of segment 17 and a private air strip is located approximately 100 feet from the existing sandy beach access route portion of the Watsonville reach, the proposed MBSST Network would not facilitate any activities that could pose a safety hazard to people residing or working in the area. Hazards to trail users would also be minimal as trail users would be moving along the trail and only exposed to airport safety areas for brief periods of time. Lastly, the proposed Master Plan would not interfere with any existing emergency or evacuation plan, as no project element would alter existing routes. Impacts related to hazards near schools, airports, private air strips, and emergency access would therefore be less than significant. As a result, the checklist items related to these conditions were excluded from the above list and further discussion can be found in the Initial Study (Appendix A of this document).

Operational conflicts between the proposed trail and agricultural operations (other than pesticide hazards) are discussed in Section 4.2, *Agricultural Resources*. Hazards related to conflicts between trail users and automobiles and railroad operations are addressed in Section 4.9, *Transportation/Traffic*. Hazards related to conflicts among and between different types of trail users and emergency access to the trail network are addressed in Section 4.14, *Public Safety and Services*.

b. Project Impacts and Mitigation Measures.

Impact HAZ-1 Grading associated with MBSST Network construction could expose construction workers to health hazards by releasing contaminants that could be present in the soil. This construction-related hazard is a Class II, *significant but mitigable* impact.

Construction of the proposed MBSST Network would involve grading. The project corridor primarily aligns with the Santa Cruz Branch Rail Line right-of-way, which extends for 32 miles of the approximately 50-mile trail. The long term use as a railroad line presents the potential



that the corridor is contaminated with metals, herbicides, polynuclear aromatics, petroleum hydrocarbons, and other contaminants associated with rail operations. In addition, land adjacent to the northern and Watsonville reaches is currently used for agricultural production. The historic and continuing agricultural use adjacent to the corridor presents the potential that the property contains residual pesticides or other chemicals routinely used in agricultural production. Construction workers could therefore be exposed to these substances in on-site soils during construction of MBSST Network segments.

A Phase I Environmental Site Assessment (ESA) was completed for the Davenport and Santa Cruz Branch Rail Lines by Geomatrix Consultants (March 1997) to identify features or historical uses or activities that could be associated with environmental impairment of soil and/or groundwater along the rail corridor. As described in Section 4.8.1(b) (Hazards Associated with Adjacent Land Uses), the Phase I report identified several hazards along or adjacent to the rail line, including, but not limited to: a potential chemical discharge through a drainage tunnel that originates at the (now closed) cement factory in Davenport (near segment 4 and sub-segment 5.1), a potential UST near the rail line's intersection with Scaroni Road (near sub-segment 5.3), soil staining along the trail in the City of Santa Cruz (near segment 8), in-ground oil tanks near Riverside Drive in Watsonville (near segment 19), and a discharge onto the corridor of unknown composition from Granite Construction (near segment 18).

As recommended in the Phase I report, a Phase II Investigation and Human Health Risk Assessment for Arsenic was conducted by AMEC Geomatrix, Inc. (December 2009) to evaluate whether historical and current features affect the MBSST Network corridor. According to the Phase II report, arsenic is generally distributed in shallow soil (less than or equal to 1.5 feet bgs) along the Santa Cruz Branch Rail Line right-of-way above the calculated site-specific background concentration of 14.4 mg/kg and is likely a result of railroad operations such as the application of arsenical herbicides along the railroad. Although the results of the risk assessment for arsenic in soil indicate that the incremental cancer risk to construction workers and recreational users is within the U.S. EPA's target cancer risk range, arsenic was detected at some locations at concentrations that could require special handling during construction activities (e.g., disposal classification). Additionally, chromium, lead, and pesticides were detected in some samples at concentrations that exceeded the hazardous waste screening criteria. The Phase II investigation also determined that soil is impacted with elevated concentrations of petroleum hydrocarbons in the drainage ditch along the railroad right-of-way adjacent to the Granite Construction Company facility in Watsonville (located along segment 18 of the Watsonville reach).

Ground disturbing activities during construction could result in contaminants being spread via dust particulates. Improper handling and disposal of contaminated soils would result in a health risk to people which could be a potentially significant impact unless mitigation is incorporated. Mitigation is required to ensure proper handling during construction and reduce risks associated with identified hazardous materials in the soil. In addition, because some segments of the trail will not be constructed for several years, the potential for previously unidentified hazardous conditions to be identified could arise. Therefore, segment-specific due diligence is required to ensure that future hazards are mitigated to a less than significant level.



Mitigation Measures. The following mitigation measures are required to reduce human health impacts during MBSST Network construction and apply to construction of all trail segments .

- HAZ-1(a) Soil Sampling and Remediation.** Prior to construction of each trail segment, a soil assessment shall be completed for that segment under the supervision of a professional geologist or professional civil engineer to determine the presence or absence of contaminated soil along the proposed trail. If soil sampling indicates the presence of any contaminant in quantities not in compliance with applicable laws or regulations, the RTC and/or implementing entity shall coordinate with Santa Cruz County Environmental Health Services to develop and implement a program to remediate or manage the contaminated soil during construction. Disposal shall occur at an appropriate facility licensed to handle such contaminants and remedial excavation shall proceed under the supervision of an environmental consultant licensed to oversee such remediation. The remediation/disposal program shall be approved by Santa Cruz County Environmental Health Services. The RTC and/or implementing entity shall submit all correspondence to Santa Cruz County Environmental Health Services prior to issuance of grading permits. All proper waste handling and disposal procedures shall be followed. Upon completion of the remediation/disposal, a qualified environmental consultant shall prepare a report summarizing the project, the remediation/disposal approach implemented, and the analytical results after completion of the remediation, including all waste disposal or treatment manifests.
- HAZ-1(b) Arsenic Management Plan.** A management plan to address arsenic-containing soil during construction of individual segments along the MBSST Network corridor shall be prepared and implemented. This plan shall include soil excavation, stockpiling, disposal procedures (considering profiling of arsenic and other constituents), and construction monitoring guidelines.
- HAZ-1(c) Granite Construction Company Petroleum Remediation and Mitigation.**¹ An analysis shall be conducted to determine whether petroleum present in the soil near the Granite Construction facility is impacting groundwater. If groundwater is determined to have been affected by on-site contamination, or if soil contamination is detected at depths of 30 feet below grade or greater, then a groundwater sampling assessment shall be performed. If contaminants are detected in

¹ Granite Construction has initiated the process of remediating petroleum contamination at the Granite Construction site (866 West Beach Street, Watsonville). A Human Health Risk Assessment (HHRA) has been prepared for the site and is currently under review by the Regional Water Quality Control Board and the Regional Transportation Commission. For access to documents related to this site, please visit: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000002086. At such time as segment 18 is being considered for implementation, the RTC and/or implementing entity shall contact Santa Cruz County Environmental Health Services to determine the status of clean-up. If the site has been remediated and the case closed, mitigation may not be required.



groundwater at levels that exceed maximum contaminant levels for those constituents in drinking water, then the results of the groundwater sampling shall be forwarded to the appropriate regulatory agency (Santa Cruz County Environmental Health Services, Central Coast Water Quality Control Board, or the State of California Environmental Protection Agency Department of Toxic Substances Control). The agency shall review the data and sign off on the property or determine if any additional investigation or remedial activities are deemed necessary.

Contaminated soils near the Granite Construction Facility in Watsonville shall also be profiled for disposal at the appropriate facility licensed to handle such contaminants and remedial excavation shall proceed under the supervision of an environmental consultant licensed to oversee such remediation.

The remediation/disposal program shall be approved by Santa Cruz County Environmental Health Services prior to issuance of grading permits for segment 18. All proper waste handling and disposal procedures shall be followed. Upon completion of the remediation/disposal, a qualified environmental consultant shall prepare a report summarizing the project, the remediation/disposal approach implemented, and the analytical results after completion of the remediation, including all waste disposal or treatment manifests.

Significance After Mitigation. With implementation of the above measures, impacts related to exposure of hazardous materials during construction would be reduced to a less than significant level.

Impact HAZ-2 **Based on the age of existing railroad bridge/trestle structures, it is possible that existing facilities contain asbestos or lead-based paint. Retrofitting or replacement of these existing structures would create the potential for exposure to these hazardous materials. However, compliance with applicable regulations regarding the removal, handling and disposal of asbestos and lead-based paint would reduce impacts to a Class III, less than significant level.**

The proposed MBSST Network project would include numerous railroad bridge/trestle crossings. All of the existing railroad bridges and trestles along the MBSST Network corridor were constructed between 1903 and 1977 (RTC, 2012). Bridge crossing treatment types could include retrofitting existing bridges or construction of new, separate trail bridges parallel to existing rail bridge structures. Most crossings would be new pre-engineered pedestrian/bicycle bridges of varying spans, parallel to existing structures. However, in some locations, existing bridges constructed prior to the 1970s may be retrofitted. In these instances, construction personnel and surrounding receptors may be exposed to friable asbestos and/or lead-containing building materials if not properly abated.



Existing regulations, including Monterey Bay Unified Air Pollution Control District (MBUAPCD) Rule 424 (National Emission Standards for Hazardous Air Pollutants [NESHAPS]) require that the owner or operator of any demolition or renovation activity has an asbestos survey performed prior to demolition. The asbestos containing material (ACM) survey is required to be performed by a licensed asbestos sampling company. Under these regulations, all testing procedures would be required to follow California and Federal protocols. Pursuant to California and Federal standards, an asbestos survey report would be required to quantify the areas of ACMs. If the existing structures are found to contain ACMs, Rule 424 requires that the ACMs must be removed according to proper abatement procedures. All abatement activities would be required to be in compliance with California and Federal OSHA and MBUAPCD requirements. All ACMs removed from existing rail bridges would be required to be hauled to a licensed receiving facility and disposed under proper manifest, if needed, by a transportation company certified to handle asbestos containing materials. Following completion of asbestos abatement, the asbestos consultant would be required to provide a report to the MBUAPCD documenting the abatement procedures used, the volume of ACM removed, where the material was moved, and the transportation and disposal manifests or dump tickets.

In addition, all construction activities associated with the proposed MBSST Network project would be required to comply with California and Federal OSHA requirements relating to lead-based paint abatement. Under these requirements, only lead-based paint trained and certified abatement personnel would be allowed to perform abatement activities. All lead-based paint removed from these structures would be hauled by a transportation company licensed to transport this type of material, and the material would be taken to a landfill or receiving facility licensed to accept the waste. Following completion of the lead-based paint abatement, the lead based paint consultant would be required to provide a report to the implementing entity documenting the abatement procedures used, the volume of lead-based paint materials removed, where the material was moved, and the transportation and disposal manifests or dump tickets.

With the required evaluation and abatement in accordance with existing regulations, impacts related to asbestos and lead-based paint would be less than significant.

Mitigation Measures. With adherence to MBUAPCD, California, and federal requirements, further mitigation is not required.

Significance After Mitigation. Impacts would be less than significant.

Impact HAZ-3 **Adjacent agricultural, commercial, and industrial activities may include the use of pesticides, herbicides, petroleum-based fuels, chlorinated solvents, or other chemicals considered to be a human health threat. Trail users and maintenance personnel could be exposed to these chemicals during and after their application to the adjacent orchards and row crops, or in the event of soil contamination or emission of hazardous materials into the air. This is a Class II, significant but mitigable impact.**



Northern Reach. The northern reach of the MBSST Network begins at the San Mateo/Santa Cruz county line on Highway 1, just north of the Waddell Bluffs, and continues south to the northern Santa Cruz city limits near Schaffer Road (refer to Figure 2-5 in Section 2.0, *Project Description*). Currently, the northern reach consists primarily of narrow steep coastal bluffs from Waddell Creek to Yellow Bank Beach at Coastal Dairies, transitioning to rural agricultural land and natural coastal mesas south to Schaffer Road. The northern half of the northern reach (approximately segments 1 and 2) would not be exposed to hazardous chemicals from agricultural operations, as no agricultural activity is located in this area. However, the southern half of the northern reach (approximately segments 3 through 5) would be located adjacent to agricultural activity in some areas.

Agricultural operations in the northern reach could include the use of hazardous chemicals. The Santa Cruz County Agricultural Commissioner's office has not established recommendations for land use setbacks, or buffers, between the land on which pesticides are applied and surrounding land uses. However, the Agricultural Commissioner requires that all pesticides be used pursuant to the manufacturers' instructions and that the pesticides are sprayed so as to prevent drift onto nearby properties. In addition, the County of Santa Cruz requires a 200 foot buffer area between commercial agriculture and non-agricultural land uses (General Plan Policy 5.13.23). However, because the proposed project is a transient recreational and transportation use, these setback requirements may not apply. The County of Santa Cruz Planning Department indicates that a reduced agricultural buffer would be allowed, and would not require discretionary approval (S. Haschert, personal communication, March 1, 2013).

Users of the trail would be exposed to agricultural chemicals through ingestion, inhalation, and dermal contact. The most likely paths of exposure are ingestion and inhalation of the chemicals during and after they are applied to the crops. Each of the chemicals applied to the crops and orchards has a certain "breakdown period" which is the time it takes for the chemical to dissipate. Regulations for some chemicals do not permit any human contact with the area sprayed until the chemical has dissipated down to acceptable levels. The re-entry periods (i.e., the period of time after which an employee may re-enter the area in which the chemical was applied) following application of the chemical are specified on the chemical label and by regulation. The Santa Cruz County Agricultural Commissioner's office requires that pesticide users strictly adhere to the chemical label and other applicable regulations.

Regardless of whether agricultural operators follow all restrictions on the pesticide label, the potential exists for trail users to trespass onto adjacent agricultural property after pesticides have been applied, thereby becoming exposed to potentially dangerous chemicals, possibly including methyl bromide. In addition, pesticide spraying requirements are generally less restrictive near transit facilities such as trails because people using them typically move through the area quickly; however, trail users may choose to linger on portions of the trail, either stopping to talk or resting. This has the potential to increase pesticide exposure to trail users.

Central Reach. The central reach begins at the northern boundary of the City of Santa Cruz and extends southeast to just south of Aptos (refer to Figure 2-7 in Section 2.0, *Project Description*). This reach of the MBSST Network corridor traverses through densely populated coastal urban areas, and does not travel through or near agricultural areas. As such, exposure to hazardous chemicals as a result of agricultural operations would not be anticipated.



Because it travels through dense urban areas, the central reach abuts numerous commercial uses, including dry cleaners, gas stations, automotive businesses and similar businesses that may utilize hazardous materials in their operations. Segment 7 of the central reach additionally passes through an industrial area. Industrial uses along segment 7 include construction and auto storage. Segment 7 would also pass by the Santa Cruz Wastewater Treatment Facility, located near Neary Lagoon Park.

Development of the proposed trail in proximity to commercial or industrial uses that utilize or store hazardous materials could increase the risk of exposure to harmful chemicals. By allowing for trail development in commercial and industrial areas where there may have been past use or there may be current use of hazardous materials, the potential for exposure may increase due to: (1) potential soil contamination resulting from past practices; and (2) the proximity of the proposed MBSST Network project to ongoing activity involving the use of hazardous materials. Development in these areas would have the potential for exposure of hazardous materials to the public.

Watsonville Reach. The Watsonville reach of the MBSST Network begins at railroad mile marker 10 near Seascape Village Park and ends at Railroad Avenue in Monterey County (refer to Figure 2-9 in Section 2.0, *Project Description*). The northern portion of the Watsonville reach (approximately segments 16 and 17) would be located adjacent to agricultural activity, while segments 18 through 20 would pass through industrial and commercial areas in the City of Watsonville and unincorporated Monterey County. Industrial uses along segments 18 through 20 include lumber, construction, and building materials sales and storage; metal fabrication; greenwaste recovery; and automotive repair. These segments additionally pass through commercial areas, which may include commercial uses such as automotive services, dry cleaners, and other uses that utilize hazardous chemicals. Trail users along the Watsonville reach may, therefore, be exposed to hazards from agricultural uses as well as hazards from commercial and industrial uses. These hazards are described in the discussions for the northern and central reaches, respectively.

Specific hazards related to elevated concentrations of petroleum hydrocarbons in the drainage ditch along the railroad right-of-way adjacent to the Granite Construction Company facility in Watsonville (located along segment 18 of the Watsonville reach) are discussed in Impact HAZ-1 above.

Mitigating Design Features. The proposed MBSST Network Master Plan contains several design and operational features intended to limit the exposure of trail users to pesticides and other agricultural chemicals. These include posting notices at entrances to the trail advising of ongoing agricultural activities, stating that the trail user agrees to using the trail at his/her own risk. In addition, trail users would be advised that agricultural operations will be occurring and may include pesticide spraying, agricultural dust and debris, and burning activities in accordance with State and local laws and ordinances. Finally, notices would state that the trail may be subject to closure without notice to accommodate such activities.

The trail would be designed with the ability for its physical closure (of isolated segments) in the event it becomes necessary to facilitate permitted spraying. The Trail Manager would work to establish a plan for receiving notices of impending spraying activity and follow-up actions, as



appropriate. To limit the extent of impacts when the trail is open, the MBSST Network Master Plan includes the installation of continuous fencing between the trail and most adjacent agricultural properties, which would discourage access to neighboring lands. In addition, in the event of a chemical or pesticide spill on an agricultural property adjacent to the trail, the Trail Manager Ranger would be responsible for closing the trail, in accordance with the responding agency's direction, and would only reopen the trail after the responding agency with jurisdiction over the spill indicates that it is safe to do so.

The Santa Cruz County Agricultural Commissioner's office is responsible for issuing pesticide spraying permits and regulating the use of pesticides and other agricultural chemicals. The implementing entity for each trail segment would work with the Agricultural Commissioner's office to minimize impacts to agricultural operators because of the development of the adjacent trail as long as pesticides and other agricultural chemicals are applied in compliance with the label, worker safety requirements, weather conditions, drift restrictions, and all other safety requirements as required by federal, state and local laws.

In addition to the above design features, there are numerous federal, state, and local regulations regarding use, storage, transportation, and disposal of hazardous materials and waste, as outlined in Section 4.8.1(d) (Regulatory Setting). In addition, the General Plans for the four trail jurisdictions contain policies that aim to minimize adverse impacts to health and quality of life associated with exposure to hazardous materials. Compliance with federal, state, and local regulations would reduce hazards from adjacent commercial and industrial operations.

Mitigation Measures. Mitigation measure AG-23(c) (Chemical Spraying Impact Reduction Options) in Section 4.2, *Agricultural Resources*, requires that the Trail Manager work with the Agricultural Commissioner's office and farmers adjacent to the trail corridor to reduce impacts to trail users from agricultural spraying, including pesticides. Non-buffer options shall be considered, including the use of alternative methods of pest and weed control and/or an agreement that farmers notify the Agricultural Commissioner's office of proposed spraying within 100 feet of the trail. This would allow the Agricultural Commissioner's office to inform RTC and/or implementing entities of all spraying within 100 feet of the trail so that the RTC and Trail Manager and/or Trail Ranger could take appropriate action (e.g., closure of that segment of the trail to prevent access and exposure).

In addition, the following mitigation measure is required to further reduce human health impacts during operation of the proposed trail.

- HAZ-3(a) Trail Closure.** A communication system shall be established between the Santa Cruz County Agricultural Commissioner's office, the RTC and/or implementing and managing entities, to convey any notices of intent to spray chemicals in a timely manner. The Trail Manager Ranger or its designee shall be responsible for closing trail segments during and following application of agricultural chemicals, and posting additional warning signs, as appropriate.



Significance After Mitigation. Proposed trail design measures, compliance with existing regulations, and implementation mitigation measures AG-2(c) and HAZ-3(a) would reduce impacts related to exposure of toxic chemicals to trail users to a less than significant level.

Impact HAZ-4 Railway and roadway accidents that involve hazardous materials could potentially create a public safety hazard by exposing people to contaminants. Due to the infrequency of train operations, the transient nature of trail use, and regulations already in place, impacts would be Class III, less than significant.

The MBSST Network corridor would primarily align with the Santa Cruz Branch Rail Line right-of-way, a 32-mile, continuous travel corridor, 31-miles of which is now owned by the RTC. The active rail line is currently used very infrequently for seasonal passenger services from Santa Cruz to the northern reach, south of Davenport and the City of Watsonville to east of Manresa State Beach, and to transport perishables (including raspberries, strawberries, and other agricultural products), lumber, and biofuels within Watsonville. However, hazardous materials (e.g. fertilizers) could be transported along the rail line in the future. A railway accident involving hazardous materials could potentially create a public safety hazard by exposing people to contaminants. In addition, the proposed MBSST Network corridor would pass through public roadways in 84 locations and would travel adjacent to roadways in some areas (e.g. in the northernmost segments the trail would abut Highway 1). A roadway accident involving hazardous materials could also create a hazard to trail users.

Under authority delegated by the Secretary of Transportation, the Federal Railroad Administration administers a safety program that oversees the movement of hazardous materials throughout the United States rail transportation system. Regulations pertaining to the transport of hazardous materials on railroads include specialized training, container sealing and movement, labeling, and emergency response. While railroad accidents related to hazardous materials spills are rare, railroad accidents are a possibility. However, implementation of existing federal, state, and local regulations pertaining to the use, containment, and transport of hazardous materials would minimize the possibility of an accident. In addition, due to the infrequency of train operations and the transient nature of trail use, the probability of an accident occurring when trail users are present would be low. Regulations already in place and the low probability of a railway accident would render impacts associated with exposure to hazardous materials from railway accidents less than significant.

As described in Section 4.8.1(c) (Other Potential Hazards), a number of roadways along the trail corridor are state- or locally-designated truck routes. The MBSST Network would cross the following designated routes: Highway 1 in the northern and Watsonville reaches; and West Lake Avenue, West Beach Street, Lee Road, Walker Street, and Highway 129 in the Watsonville reach. None of the designated routes in the City of Santa Cruz would be crossed by the trail. The City of Capitola designates any street or portion of a street that is permitted to carry vehicles exceeding three tons as a truck route. Thus, the trail may cross a number of truck routes in the central reach through Capitola.

Trucks commonly carry a variety of hazardous materials, including gasoline and various crude oil derivatives, and other chemicals known to cause human health problems. In the event of an



accident, such materials may be released, resulting in a public safety hazard. Implementation of existing federal, state, and local regulations pertaining to the use, containment, and transport of hazardous materials would minimize the possibility of an accident. State and local agencies such as the CHP, Caltrans, and City and County Fire Departments would respond to hazardous materials transporting emergencies. The Trail Manager is responsible for managing and responding to issues and incidents along the trail (refer to Section 2.0, *Project Description*). In the case of a railway or roadway accident involving hazardous materials in the vicinity of the MBSST Network, the Trail ~~Manager~~ Ranger would be responsible for closing the trail in the vicinity of the accident, in accordance with Fire Department direction, and would only reopen the trail after the appropriate entity (CHP, Caltrans, or Fire Department) indicates that it is safe to do so.

Mitigation Measures. No mitigation is required.

Significance After Mitigation. Compliance with applicable federal, state and local laws would ensure less than significant impacts.

Impact HAZ-5 Underground utility lines may be located beneath the proposed MBSST Network. Construction and design of the proposed trail would be affected by the presence of these lines. This is a Class II, significant but mitigable impact.

Existing surface and subsurface utilities within the Santa Cruz Branch Rail Line right-of-way include active and abandoned railroad communications cable, signal and communication boxes, fiber-optic cables, water and sewer lines, and telephone lines. In addition, the proposed trail may cross over utility lines buried beneath any of the 84 roadway crossings. A rupture of certain types of pipelines could expose trail users, maintenance workers, and nearby residences to flammable and toxic substances.

The Trail Manager ~~and Trail Ranger~~ is are responsible for managing and responding to issues and incidents along the trail (refer to Section 2.0, *Project Description*). In the case of a pipeline rupture in the vicinity of the MBSST Network, the Trail ~~Manager~~ Ranger would be responsible for closing the trail in the vicinity of the accident, in accordance with Fire Department direction, and would only reopen the trail after the appropriate entity (CHP, Caltrans, or Fire Department) indicates that it is safe to do so.

Mitigation Measures. The following mitigation measure is required to reduce impacts related to transmission lines in the MBSST Network project area.

HAZ-5(a) Utility Line Location and Consultation. Prior to construction of each segment, the implementing entity shall determine the presence and exact location of any underground utility lines that correspond to the trail alignment. In addition, the presence of any above-ground utility lines in close proximity to the proposed alignment shall be determined.

If any utility lines are found to be in proximity to the trail alignment, the implementing entity shall contact the utility line operator regarding any regulations for grading and construction activities near the lines. The trail alignment shall be constructed and designed in compliance with all regulations and policies set forth by the operating entity.

Significance After Mitigation. With implementation of the above mitigation measure, impacts related to utility lines in the MBSST Network area would be reduced to a less than significant level.

Impact HAZ-6 The proposed MBSST Network project would introduce a recreational use into areas designated as moderate and high wildland fire hazard areas. However, compliance with existing policies and state and local regulations would ensure Class III, less than significant impacts.

Northern Reach. According to the CalFire Fire Hazard Severity Zone map for SRAs in Santa Cruz County (CalFire, November 2007), the northern reach contains a mix of moderate and high hazard severity designations. The proposed MBSST Network project would not include the construction of any buildings in the northern reach. Therefore, the project would not expose structures to a significant wildland fire risk. However, development of a multi-use trail in this area could expose trail users to risk of loss, injury or death involving wildland fire hazards. As discussed in Section 4.12, *Public Safety and Services*, emergency service providers with jurisdiction over the northern reach would have sufficient access to the trail in the case of an emergency, such as a wildfire, and the proposed MBSST Network project would not be expected to lengthen existing emergency response times. In addition, due to the relative infrequency of wildfires and the transient nature of trail use, the potential for exposing trail users to a significant wildland fire hazard would be low. In the event of a wildland fire near the northern reach, the Trail ~~Manager~~ Ranger would be responsible for closing the trail, in accordance with Fire Department direction, and would only reopen the trail after the Fire Department with jurisdiction over the fire indicates that it is safe to do so.

Central Reach. According to the CalFire Fire Hazard Severity Zone map for LRAs in Santa Cruz County (CalFire, October 2007), the central reach contains both moderate and high fire hazard designations through segment 6, part of segment 7 and segment 11 near New Brighton State Beach, while the remainder of the reach (which is more urbanized) is unzoned. In the urban areas of the central reach, the potential for exposure of trail users to wildland fire hazards is minimal. In addition, the proposed MBSST Network project would not include the construction of any buildings in the central reach. Therefore, the project would not expose structures to a significant wildland fire risk. However, in the less developed areas designated as having moderate to high fire hazards, development of a multi-use trail could expose trail users to wildland fire hazards. As discussed in Section 4.12, *Public Safety and Services*, emergency service providers with jurisdiction over the central reach would have sufficient access to the trail in the case of an emergency, such as a wildfire, and the proposed MBSST Network project would not be expected to lengthen existing emergency response times. As noted under the *Northern Reach* discussion above, due to the relative infrequency of wildfires and the transient



nature of trail use, the potential for exposing trail users to a significant wildland fire hazard would be low. In the event of a wildland fire near the central reach, the Trail ~~Manager~~ Ranger would be responsible for closing the trail, in accordance with Fire Department direction, and would only reopen the trail after the Fire Department with jurisdiction over the fire indicates that it is safe to do so.

Watsonville Reach. According to the CalFire Fire Hazard Severity Zone map for LRAs in Santa Cruz County (CalFire, October 2007), the Watsonville reach is primarily designated as having moderate and high fire hazards, while the portion of the trail within the City of Watsonville is unzoned. In the urban areas of the Watsonville reach, the potential for exposure of trail users to wildland fire hazards is minimal. However, in the rural and agricultural areas designated as having moderate to high fire hazards, development of a multi-use trail could expose trail users to wildland fire hazards. In addition, as discussed in Section 2.0, *Project Description*, a new public restroom facility would be constructed within the Watsonville reach. This structure may also be exposed to a risk of loss in the event of a wildland fire. As discussed in Section 4.12, *Public Safety and Services*, emergency service providers with jurisdiction over the Watsonville reach would have sufficient access to the trail in the case of an emergency, such as a wildfire, and the proposed MBSST Network project would not be expected to lengthen existing emergency response times. As noted under the *Northern Reach* discussion above, due to the relative infrequency of wildfires and the transient nature of trail use, the potential for exposing trail users to a significant wildland fire hazard would be low. In the event of a wildland fire near the Watsonville reach, the Trail ~~Manager~~ Ranger would be responsible for closing the trail, in accordance with Fire Department direction, and would only reopen the trail after the Fire Department with jurisdiction over the fire indicates that it is safe to do so.

Mitigation Measures. No mitigation is required.

Significance After Mitigation. Compliance with applicable federal, state and local laws would ensure less than significant impacts.

d. Cumulative Impacts. Additional development resulting from buildout of Santa Cruz County and the cities of Santa Cruz, Capitola, and Watsonville will cumulatively increase the potential for exposure to existing soil contamination and wildland fire hazards. Cumulative development in the area would also increase the interface among recreational, agricultural, commercial, and industrial uses, and may include removal and/or replacement of existing bridges along the MBSST Network corridor, including bridges that may contain asbestos or lead-based paint. Therefore, an overall increase in the potential for exposure to hazards, hazardous materials, and wildland fires will occur as urbanization occurs. The proposed MBSST Network and other facilities would incrementally contribute to this cumulative effect. However, all new development would be subject to review by the relevant jurisdiction and as well as to any regulations in place to minimize any potential hazards. Impacts associated with individual developments would be addressed on a case-by-case basis and appropriate mitigation would be designed to mitigate impacts resulting from individual projects, depending upon the type and severity of hazards present. Assuming that all hazards are adequately addressed for each individual development proposal, cumulative impacts related to hazards and hazardous materials are would be less than significant.

